

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMERCIAL CENTER FOR PATENTS AND TRADEMARKS
Washington, D.C. 20540
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10 030,133 | 03/19/2002 | Matthias Fryda | P21932 | 8161 |

7655 7540 01/30/2003

GREENBLUM & BERNSTEIN, P.L.C.
1950 ROLAND CLARKE PLACE
RESTON, VA 20191

EXAMINER

KIKNADZE, IRAKLI

ARTICLE PAPER NUMBER

2882

DATE MAILED: 01/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/030,133

Applicant(s)

FRYDA ET AL.

Examiner

Irakli Kiknadze

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133)
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 19 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- _____ of the _____ application has been received.

Attachments

1. ☐ Notice of References Cited (PTO-894)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-845)
3. ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
4. ☐ Review of Claims (PTO-894)
5. ☐ Notice of Informal Patent Application (PTO-117)
6. ☐ Other _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. Claims 1-9, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sahores (US Patent 4,159,37) in view of Imai et al. (US Patent 5,173,612).

With respect to claims 1-3, Sahores discloses (Fig. 1) an X-ray anode (11), characterized in that the anode (11) material is located on the X-ray window (3), characterized in that the thickness of the X-ray window (3) is in the range of 300 μm to 2000 μm (column 4; line 6-44).

With respect to claims 4-7, the X-ray anode (11) is a metal and the anode (11) material thickness is between 1 μm and 25 μm (column 4; lines 45-49).

With respect to claims 8 and 9, the anode (11) material may completely or partially covers the window (3) (column 4; lines 18-24).

With respect to claims 15 and 16, the X-ray anode is used for X-ray units (column 1; lines 5-14). Sahores discloses that X- window (3) which is made of a thin shell may be made of any material which is transparent to the X-ray radiation, obviously that material can be a diamond too. Further, with respect to claims 1, 4-9, 15 and 16, Imai et al. discloses (see abstract) an X-ray diamond window for X-ray apparatus

characterized by high transparency for X-rays, high flatness, and high strength (column 1;

Art Unit: 2882

With respect to claims 2 and 3, Imai discloses that X-ray window can be a polychrystalline or monoccrystal diamond window (column 1, line 65 – column 2, line 20).

It would have been obvious to one ordinary skill in the art at the time of the invention was made to employ the X-ray windows made from diamond in the Sahores invention, in order to achieve high transparency for X-rays, high flatness, and high strength. It has been held to be an obvious matter within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. in re Leshin, 125 USPQ 416.

2. Claims 10 -12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sahores (US Patent 4,159,37) in view of Imai et al. (US Patent 5,173,612) and in further view of Diemer et al. (US Patent 4,622,688).

With respect to claims 10 -12, Sahores in view of Imai show generally all elements of the invention except disclosing that an intermediate layer is provided between the X-ray anode and the X-ray window. Diemer discloses (Fig.3) an X-ray tube (1) comprising an X-ray anode (13) and an X-ray exit window (6) and an intermediate layer (12) is provided between the X-ray anode (13) and the X-ray window (6) (column 3; 27-50). The intermediate layer may be a radiation filter. Diemer X-ray apparatus is suitable for use in an X-ray analysis apparatus, which is constructed to demonstrate the presence in a specimen of element having a low atomic number (first layer of anode

Art Unit: 2882

layer (12)). Consequently, it is unnecessary to change the X-ray tube during the execution of a complete analysis (column 3; lines 50-65).

It would have been obvious to one ordinary skill in the art at the time of the invention was made to provide the transmission X-ray tube comprising the intermediate layer between the X-ray anode and the X-ray window, as taught by Diemer in order to selectively produce an X-ray beam containing a comparatively large amount of long – wave as well as short wave radiation, without affecting the outside construction, shape and useful properties of the X-ray tube.

3. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sahores (US Patent 4,159,37) in view of Imai et al. (US Patent 5,173,612) and in further view of Kitade et al. (US Patent 5,809,106).

With respect to claims 13 and 14, Sahores in view of Imai show generally all elements of the invention except disclosing a temperature sensor for the X-ray apparatus. Kitade discloses an X-ray anode (40) and a temperature sensor to sense with a high-accuracy and prevent X-ray radiation conditions, such as local melting from being caused to the X-ray anode (column 13, line 64 – column 14, line 21). It would have been obvious to one ordinary skill in the art at the time of the invention was made to employ the temperature sensor for the X-ray apparatus, as taught by Kitade in order to monitor temperature and allow the X-ray radiation always be done under safe, high-accuracy and high-efficiency conditions

Art Unit: 2882


Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irakli Kiknadze whose telephone number is (703) 305-6464. The examiner can normally be reached on M-F(8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Irakli Kiknadze
January 22, 2003


ROBERT H. KIM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800